ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-WB-10 2004

Wetlands Permitting for Construction and Maintenance of Ponds

Ponds are constructed for many purposes, such as fire protection, agriculture (irrigation), wildlife, aesthetics, or recreation. Very often people want to make their wetland into a pond. Because of the important functions and values wetlands provide, any impact to wetlands requires a permit from the Department of Environmental Services Wetlands Bureau.

When evaluating a wetlands application, DES considers the need for the wetlands impact, how the design and construction proposes to avoid and minimize impacts to the wetland, and the significance of the wetlands resource.

The purpose and design of the pond must correspond with the site conditions. An understanding of the location and type of wetland will help provide an accurate picture of the site, and assist in determining the project impact classification for a wetlands permit.

Identify the wetlands on your property

First, it is necessary to locate all wetland boundaries on your property ***before*** you design the pond. Most areas in New Hampshire do not have maps that depict all wetlands. Wetlands are identified in the field using three indicators:

- Wetlands hydrology - the presence of **water** at or **near** the surface for part of the growing season.
- Presence of **hydric soils** (poorly drained or very poorly drained soils).
- Prevalence of **wetlands vegetation**.

  For pond construction projects, it is necessary to establish the boundaries of the wetlands with very poorly drained soils (formerly called hydric A soils) and poorly drained soils (formerly called hydric B soils), as that will affect DES's classification of the project.

  The permitting process requires that if you require the assistance of a professional to identify the wetland boundaries, the wetland delineations must be done by certified wetland scientists (or those who qualify for exemptions under the law, RSA 310-A:79) for any minor or major impact projects.

  If after locating the wetland boundaries on the property, you are able to design a dug pond that does not impact wetlands, surface waters, areas in or adjacent to municipally designated prime wetlands, or other jurisdictional areas, you would not need a permit from DES to construct the pond. However, once constructed, the pond would be

considered surface water and would require a permit to make any modifications to it. This includes doing maintenance dredging (even if done when the water is low or has been "drawn down."

Does the pond's purpose match the site?

The topography, soils and hydrology on the property will affect how your pond functions and whether the type of pond you want will match the landscape and soil conditions. Consider the following requirements and design techniques for specific types of ponds.

Wildlife Ponds

The design of a wildlife pond involves more than a simple dug basin, as different wildlife have different habitat requirements. Wildlife ponds have shallow and deep areas. Shallow areas of water (less than two feet deep) allow emergent vegetation to grow and provide food, nesting, and cover sources for waterfowl, wading birds, reptiles and amphibians, and sometimes fish. However, to survive the winter, some animals (including fish) need deepwater areas that do not freeze completely. A pond that contains medium and large rocks and roots, and is surrounded by diverse vegetation of various heights around and near the pond will increase the potential for wildlife diversity. Ponds that are irregular in shape have more shoreline and therefore a greater contact zone between water and upland habitats. Increased edge (i.e., shoreline) provides more diverse habitat and greater numbers and diversity of wildlife. Providing native shrub species (such as winterberry, highbush blueberry, silky or red-osier dogwood, and speckled alder) around a large part of the pond will provide additional cover as well as a food source. Providing live trees and leaving upright, dead trees ("snags") near the pond will offer food and nesting sites for additional species and increase habitat diversity. Variations in type and height of vegetation and the extent to which dead materials are allowed to remain provide structure for a diversity of animal species.

Fish Ponds

Ponds constructed for supporting native fish populations should contain deep areas (minimum eight to ten feet) in at least 25 to 50 percent of the pond area. The depth helps to ensure that wintertime dissolved oxygen will be adequate to support fish populations and that there will be unfrozen areas within the pond. Cold-water species, such as trout, require cool water temperatures year-round and thus may require more than ten feet of water depth. Check with the New Hampshire Fish and Game Department regarding its stocking rules if the pond will be stocked with fish **other than** trout obtained from a New Hampshire fish grower with a current aquaculture license.

Agricultural Pond

Agricultural ponds can be used to water livestock, irrigate crops, or to raise fish for commercial sale. Raising fish for commercial sale would require a commercial aquaculture license from Fish and Game. Construction of an agricultural pond may qualify as a minimum impact project provided the project meets certain criteria. Applicants must be "cooperators" with their county conservation districts and have established conservation plans. Impacts for the proposed pond are limited to wet meadow wetlands, the impacts may not include more than 15 percent very poorly drained soils, nor exceed three acres, and may not be located in or adjacent to municipally designated prime wetlands. Certification from the county conservation district ensures that the

project is in accordance with the *Best Management Wetland Practices for Agriculture* (N.H. Department of Agriculture 1993, amended 1998) and that the project is necessary for or incidental to a pre-existing and ongoing bonafide agricultural operation [Rule Wt 303.04(u)]. To apply for a permit for such activities, a cooperator may submit a completed "Application for Minimum Impact Agricultural Projects" with its required attachments.

Fire Protection

A fire protection pond must meet several DES requirements. First, a written statement from the fire chief addressing the need for the fire pond should accompany the application. If a dry hydrant will be installed, the location and configuration must be shown on the pond construction plans. It is important to provide an area to access the dry hydrant connection and intake for use and maintenance. Be sure that your plans reflect such an access area.

All Ponds Other than Wildlife Ponds

Unless a pond is meant to provide habitat for wildlife, many owners wish to control the growth of aquatic vegetation in the pond. The best way to help control this vegetation when designing the pond is to build most of the pond deeper than two feet and to build the inner slopes of the pond as steep as possible. This will limit the area of the pond that is suitable for growth of emergent vegetation. Steep slopes can create a safety hazard, so take appropriate measures.

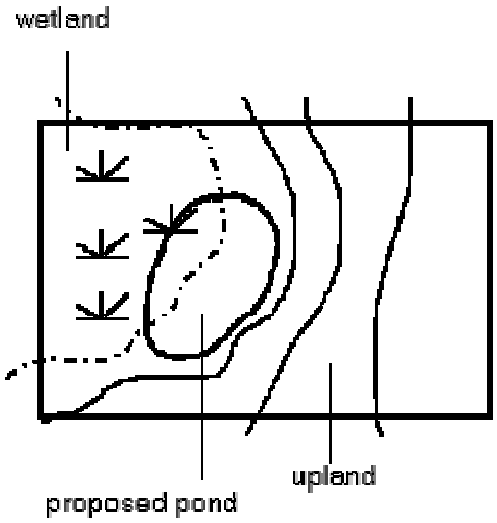
Permitting Process

Classification of Project

DES classifies each project that proposes impacts to wetlands or other jurisdictional areas according to its potential level of impact in one of three categories: minimum, minor, or major impact. Some of the criteria for determining the impact classification of pond projects are described below. For pond construction, it is necessary to establish the boundaries of the wetlands with very poorly drained soils and poorly drained soils, as that may affect DES's classification of the project.

<table>
<tr><th colspan="3">Classification Related to Pond Projects with Impacts to Jurisdictional Areas</th></tr>
<tr><td>Minimum Impact</td><td>Minor Impact</td><td>Major Impact</td></tr>
<tr><td colspan="2">Project is not in or adjacent to prime wetlands.
Project is not in an area with recorded occurrences of threatened or endangered species or exemplary natural community.
Project is not located in any bog, sand dune or tidal wetland.</td><td>Any pond proposed in any bog, sand dune, and tidal wetland or within 100 feet of the highest observable tideline, in or adjacent to prime wetlands, in an area with recorded occurrences of threatened or endangered species, or exemplary natural community.</td></tr>
<tr><td>Construction of a pond with less than 20,000 square feet</td><td>Disturbance of less than 20,000 square feet, that:</td><td>Disturbance of more than 20,000 square feet.</td></tr>
</table>

of wetland impact that: ○ Disturbs only poorly drained soils. ○ Has no streams flowing into or out of the proposed pond.	○ Disturbs very poorly drained soils. ○ Disturbs less than 200 linear feet* of intermittent or perennial stream channel and bank.	Disturbance of more than 200 linear feet* of stream channel and bank.
Maintenance dredge of a constructed pond if not in or adjacent to a prime wetland.		Maintenance dredge of a constructed pond if in or adjacent to a municipally designated prime wetland.
* Linear feet of impact to a perennial stream is measured as follows: If a perennial stream (or river) and its banks are subject to impacts by the projects, the linear distance of each bank is counted separately as well as the linear distance of the channel. For instance, if a culvert was 50 feet long in a perennial stream, the impacts would be considered 150 feet: 50 feet for the channel plus 50 feet for each bank.		



Minimization of Impacts

Design

In order for DES to issue a permit, the pond design needs to minimize or avoid impacts to wetlands and surface waters. Consider alternatives to constructing the proposed pond in the wettest portion of the property and don't put the entire pond in the wetland. The diagram provided shows how a pond should straddle the wetland boundary, so it is minimizing impacts by using some wetlands to provide the water and the uplands to provide more area.

Impounding water from a perennial stream to create a pond usually is not the alternative with the least impact to wetlands or surface waters. This changes stream flow characteristics and water quality in the pond's footprint as well as downstream of the pond. The construction of a pond should pose minimal or no effect on stream flow or aquatic habitat. In addition, ponds constructed in streams require frequent maintenance because of the sediment that is trapped in the pond by flowing water.

Around Your Pond

It is important to leave an unmown vegetated buffer around as much of the pond's edge as possible, of grass and other herbaceous vegetation, with shrubs or trees. This provides benefits to water quality - by stabilizing the slopes with strong roots, thus minimizing erosion - and diverse habitat for food and cover. In addition, a wide vegetated buffer also reduces the inflow of nutrients to the pond, which will help control growth of algae and undesired aquatic vegetation in the pond.

Construction

How a pond is constructed can have a significant impact. Therefore, it is important that the plans include a "construction sequence." This information provides a description of when and how the work is done, including equipment access, proposed erosion control methods, how long the disturbed area will be exposed, how the unstabilized soil will be covered (such as, seeded and mulched with hay). To ensure that the impacts are minimized during construction, plan to work during low flow or dry conditions. Erosion controls must be installed before construction begins and maintained until the area is stabilized.

To minimize delays in the application review and approval process, make sure that:

- The need for the impact is addressed (What is the purpose of the pond? Why is the amount of proposed impact necessary?), and the least impacting alternative is documented.
- The appropriate application form is submitted with all of the requested attachments and proper filing fee.
- Applications include overview plans and cross-sections, showing the boundaries of all wetlands and surface waters on site, the pond depth, the limits of construction, siltation and erosion controls and a construction sequence. All plans and cross-section diagrams must be drawn to scale or include project dimensions (including area of proposed pond and impacts, and depths of the proposed pond).
- If the project includes a dam that is four feet or higher, or impounds more than two acre-feet of water, it is necessary to submit a separate application to the DES Dam Bureau. (An acre-foot is defined as the volume of water contained in a one-acre area that is one-foot deep.) For further information regarding dams, contact the DES Dam Bureau at (603) 271-3406, or go to **their website**.
- Plans should indicate that dredge spoils will be disposed of in upland areas outside of the Wetlands Bureau's jurisdiction (not in low areas that may be wetlands too!).
- For ponds classified as minimum impact, the applicant shall demonstrate by plan and example that the following factors have been considered in the design in assessing the impact of the proposed project:
    1. Type of wetland proposed for impacts.
    2. Surface areas of wetlands subject to impacts.
    3. Hydrologic connection of the proposed pond to nearby wetlands and surface waters.
    4. The impact upon abutting owners (No permit to dredge or fill shall be granted if it shall infringe on the property rights or unreasonably affect the value or enjoyment of property of abutting owners).
    5. Lack of alternatives with lesser wetland and surface water impacts.
- For ponds classified as minor or major impact projects, the applicant must address Wt 302.04(a) (1-20).

Filing Fees

All applications must include a filing fee. The filing fee for applications for a *minor* and *major* impact project is based on the area of impact. It is calculated based on the square footage of impact. Review the Standard Dredge and Fill application for specific information about the fee. Checks for filing fees should be made payable to the *NH DES Wetlands Bureau* and accompany the application.

Pond Maintenance

Once your pond is constructed, over time it may be necessary to maintain the designed depth by dredging. A permit to conduct the maintenance dredge is required even if the dredging is done after the pond has been drained and there is no water present, with the exception of a legal fire pond.

- If a pond is legally constructed and approved as a fire pond by the local fire chief, the pond may be cleaned out when necessary without a permit from the department, **provided** the pond is not enlarged or extended. The dredged materials from the pond must be deposited outside DES Wetlands Bureau jurisdictional areas.

Most ponds may use the Permit By Notification (PBN) process to obtain authorization for maintenance dredging. This form may be downloaded from. Project # 3 of the 14 projects for which the PBN may be used, is for maintenance dredging to provide continued usefulness of man-made ponds and spillways provided that: (1) the work is done within the original bounds of a legally constructed project; (2) the work does not exceed 20,000 square feet; and (3) for man-made ponds, the pond has not been abandoned.

The notification or permit authorizes one-time maintenance dredge work; it does not allow for annual or periodic maintenance work. Like the other Permit By Notification projects, within 10 calendar days following the completion of the project, photographs of the completed project must be submitted to DES.

Invasive Plant Species

Consideration should also be given to avoiding conditions and practices that encourage the growth of invasive and exotic plant species. Any time soil is disturbed, there is potential for invasive plants to take over. Purple loosestrife (*Lythrum salicaria*) is an example of a non-native plant that invades sunny, freshwater wetlands such as marshes, wet meadows, ponds, and streamside areas. Its purple flowers appear as spikes in late June through August. Each plant can produce two and a half million seeds. Once established, purple loosestrife takes over an area and eliminates the native species that provide food, nesting, and shelter for wildlife. Agriculture can be affected when purple loosestrife invades and clogs drainage and irrigation ditches.

If purple loosestrife is not present before a pond is constructed, it is still possible for the plant to invade the edges of the pond when soils are disturbed during pond construction. It is a good practice to monitor your pond for the presence of this plant. Cutting the plant back when the flowers start to appear (before it goes to seed) will help control the spread of this species. Many organized volunteer groups seeking to eliminate the invasive plants have observed that the physical removal of this plant is not a permanent answer to the problem. For more information about purple loosestrife, see DES fact sheet WD-BB-45 *Purple Loosestrife: An Exotic Menace*. Contact DES Public Information Center for a copy or view it on the DES website.

Once you obtain your permit

If DES has classified your pond construction project as a minimum impact project, once you receive your DES wetlands permit you can start work (as long as all other local and state permits have been obtained). If the project is considered a minor or major impact

project, the US Army Corps of Engineers has a role in the process. The Corps of Engineers may require additional information, or in the case of major projects, will issue a permit under the New Hampshire Programmatic General Permit. Submit plans for minor and major impact projects in 8-1/2" x 11" formats to the Corps of Engineers.

Under the Permit By Notification (PBN) process, the applicant can verify on-line (using the Wetland Permits Query) whether or not DES considers the notification complete and whether work may begin. With the Permit By Notification process, within 10 days of the project's completion (such as a maintenance dredge), photographs of the completed project must be submitted to DES. (Use the Confirmation of Project Completion for Permit By Notification form.)

Wetlands permits must be posted at the site in a conspicuous location when the work is being conducted.

Within three calendar days of final grading or temporary suspension of work in an area that is in or adjacent to wetlands or surface waters, all exposed soil areas shall be stabilized by seeding and mulching during the growing season, or if not within the growing season, by mulching with tack or netting and pinning on slopes steeper than 3:1.

For More Information

For additional information on the state's wetlands permitting process, go to the DES Wetlands Bureau's website or contact the Wetlands Bureau by **email** or by phone: (603) 271-2147.

Links/ Contact

NH Fish and Game Department
Inland Fisheries Division, (603) 271-2502

NH Natural Resources Conservation Service (NRCS) publications

J-J Newman, Extension Specialist, Aquaculture; UNH Cooperative Extension (603) 749-1565 - E-mail